Figure 1

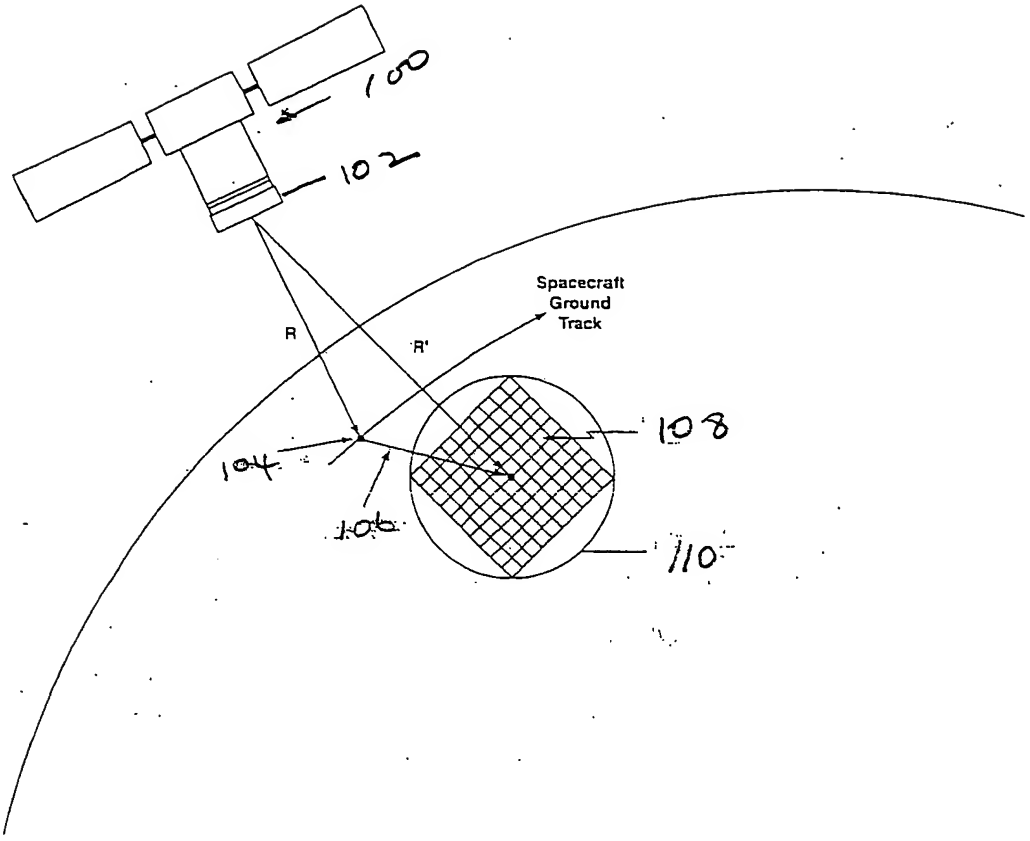
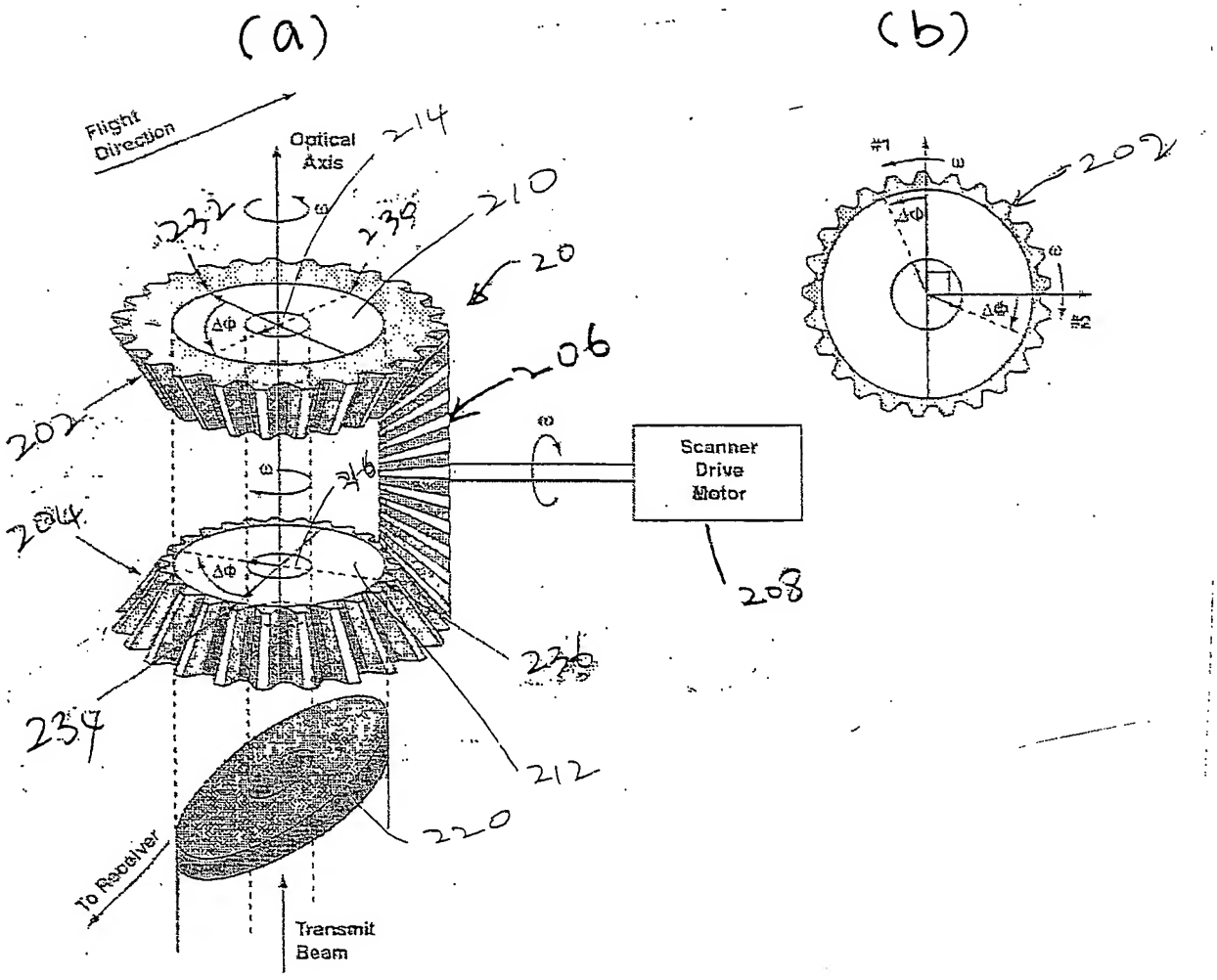


Figure 2


(a)
(b)
Flight Direction
Optical Axis
214
232
230
210
20
206
202
204
216
Scanner Drive Motor
208
234
212
220
To Receiver
Transmit Beam
ΔΦ
ω

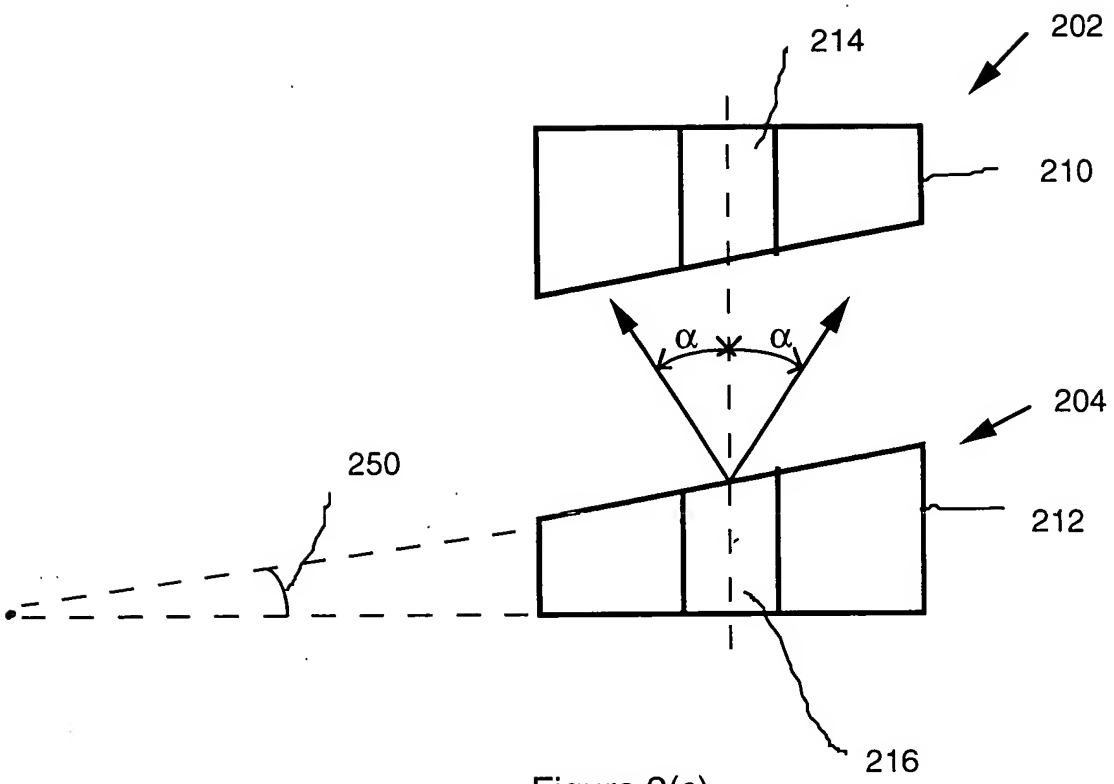


Figure 2(c)

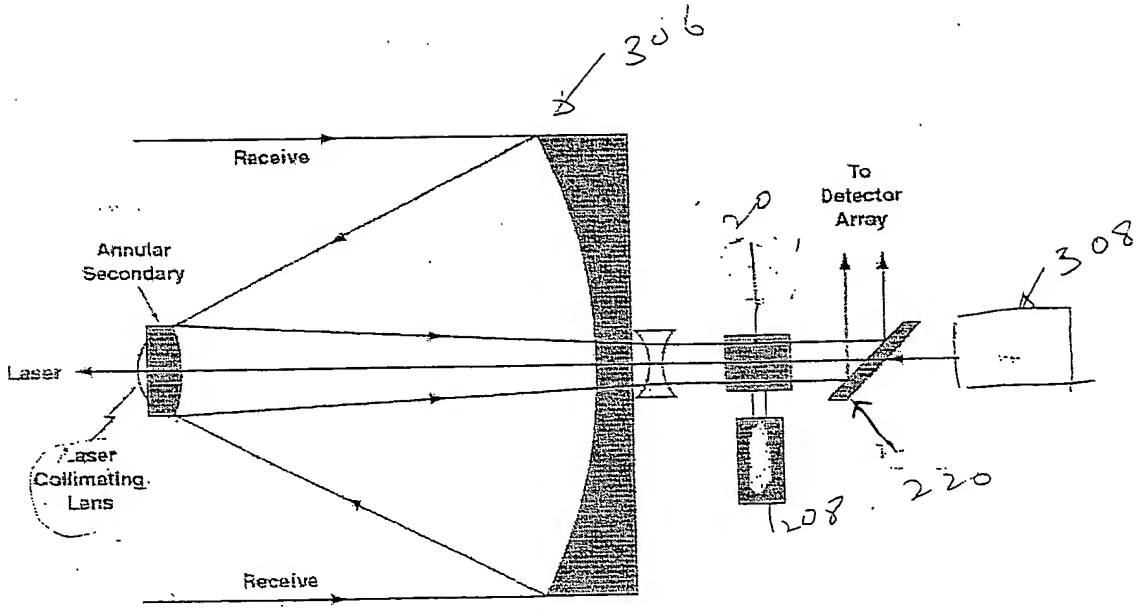
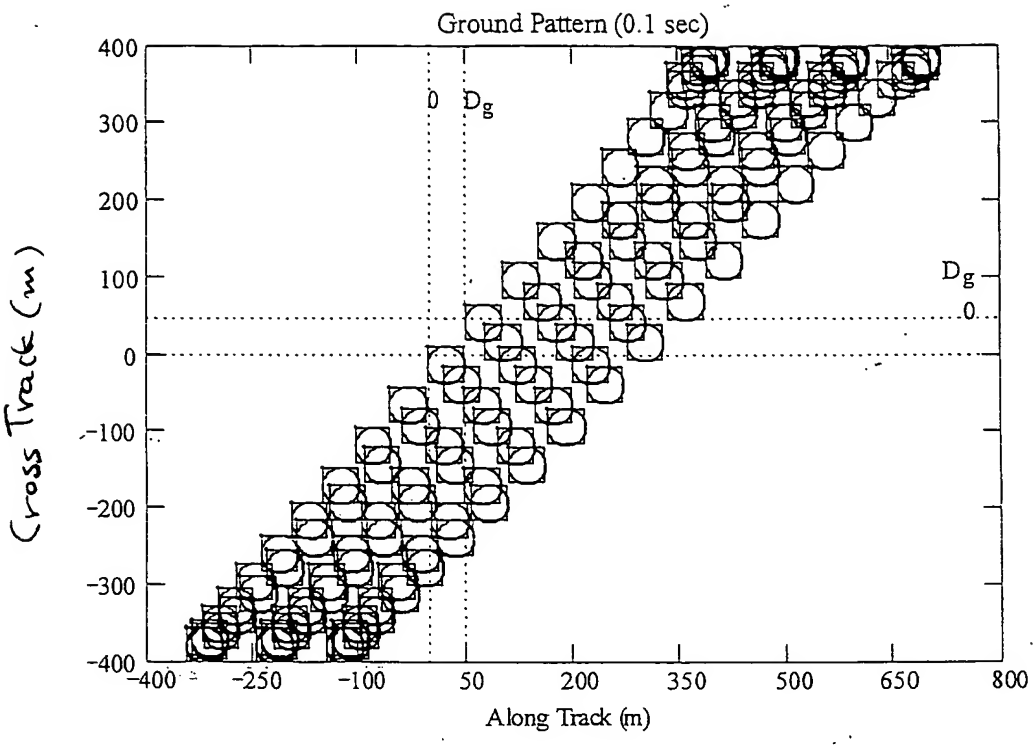

306
Receive
To
Detector
Array
210
308
Annular
Secondary
Laser
Laser
Collimating
Lens
208
220
Receive

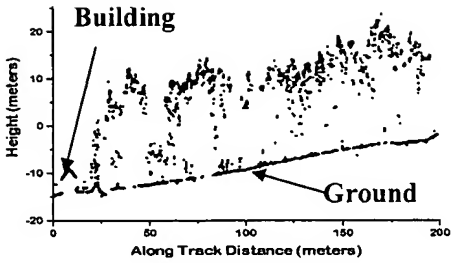
Figure 3



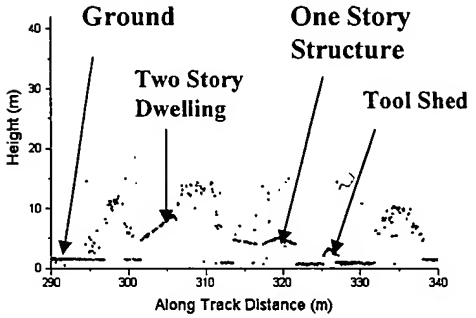
$D_g = 50\,m$

Figure B4

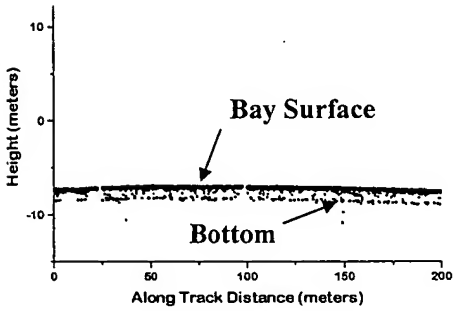
- **Engineering Flight Parameters**
  - NASA P-3 Aircraft, Wallops Flight Center
  - Locale: Chincoteague, VA & Chesapeake Bay
  - Flight Altitudes: 3.5 to 6.7 km (11,000 to 22,000 ft)
  - Early afternoon (maximum solar background)
  - Laser Energy: < 2 μJ @ 532 nm
  - Laser Repetition Rate: 3.8 kHz
  - Laser Power: ~7 mW
  - Effective Telescope Diameter: 14 cm
  - Mean Signal Strength per Laser Fire: ~ 0.88 pe



Tree Canopy Heights



Buildings and Trees



Shallow Water Bathymetry

Figure 5